

**SCHNITZER INVESTMENT CORP – KITTRIDGE DISTRIBUTION CENTER  
CSM Site Summary**

**SCHNITZER INVESTMENT CORP – KITTRIDGE DISTRIBUTION CENTER**

Oregon DEQ ECSI #: 2442

4959 NW Front Avenue

DEQ Site Mgr: Rod Struck

Latitude: 45.5577°

Longitude: -122.7316°

Township/Range/Section: 1N/1E/19

River Mile: 8.6 West bank

LWG Member ☐ Yes ☒ No

Upland Analytical Data Status: ☐ Electronic Data Available ☒ Hardcopies only

**1. SUMMARY OF POTENTIAL CONTAMINANT TRANSPORT PATHWAYS TO THE RIVER**

The current understanding of the transport mechanism of contaminants from the uplands portions of the Schnitzer Investment Corp – Kittridge Distribution Center (Kittridge) site to the river is summarized in this section and Table 1, and supported in following sections.

**1.1. Overland Transport**

Stormwater runoff from the Kittridge site is directed to a series of catch basins equipped with sediment traps before being discharged into the City of Portland stormwater system. Over 90 percent of the site is either paved or covered with buildings. The small portion of the site that is not paved is covered with imported clean landscape fill. The site is 0.1 mile from the river. Sheet runoff is not currently a potential pathway of concern at this site. No historical information was located.

**1.2. Riverbank Erosion**

Not applicable. The site is not adjacent to the river.

**1.3. Groundwater**

The DEQ has indicated that, based on available data, it is unlikely that groundwater with elevated metals concentrations is migrating from the site to the Willamette River (DEQ 2004, pers. comm.). No information was available indicating that preferential pathways have been assessed at the site.

**1.4. Direct Discharge (Overwater Activities and Stormwater/Wastewater Systems)**

Stormwater from the site currently discharges to the Willamette River through City of Portland Outfall #19. Historically, there was a possible direct link from the site to the river through a drain channel at the cylinder testing area. The drain channel was used to collect water from the cylinder testing area and from water sprayed onto cylinders to keep them cool during the summer. This water then flowed into a drain line that terminated at the river (TETC 1990, Appendix F). DEQ (2004) reported that insufficient data are available to evaluate if historic stormwater discharges have impacted the Willamette River.

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### 1.5. Relationship of Upland Sources to River Sediments

See Final CSM Update.

### 1.6. Sediment Transport

Not applicable. Site is not adjacent to the river.

## 2. CSM SITE SUMMARY REVISIONS

Date of Last Revision: August 31, 2005

## 3. PROJECT STATUS

Activity	Date(s)/Comments
PA/XPA	<input checked="" type="checkbox"/> PA/XPA equivalent (Bridgewater 2000)
RI	<input type="checkbox"/>
FS	<input type="checkbox"/>
Interim Action/Source Control	<input type="checkbox"/>
ROD	<input type="checkbox"/>
RD/RA	<input type="checkbox"/>
NFA	<input type="checkbox"/>

DEQ Portland Harbor Site Ranking (Tier 1, 2, or 3): Tier 3

## 4. SITE OWNER HISTORY

Sources: Polk City of Portland directories, Sanborn fire insurance maps, DEQ (2004), TETEC (1991) for the period 1939-1991; Bridgewater (2000) for 1991-2000.

Owner/Occupant	Type of Operation	Years
Schnitzer Investment Corp. / Colour Systems, WorldCom, 04 Controls, Oregonian, Midwest Sign, Applied Industrial Technologies, Uniq Distributing. (owner/operators)	Storage, mixing, and distribution of oil-based inks; storage of trailer-mounted generators and large spools of cables and supplies for maintenance of telecommunication cables; newspaper machines, limited bearing cleaning with lube oil; distribution of household decorative tiles and tile installation supplies.	Unknown - present
Brian J. and Betty A. Fryer (owner)		1999 - unknown
Crawford Street Corp /Asset Recovery (owner/operator)	Scrap metal handling and diesel truck refueling	1991- 1996
Northwest Airgas, Inc. / Chem Lime Corp. (owner/operator)	Some building demolition and partial site cleanup and remediation	1987 - 1989
Airco/Chem Lime Corp. (operator)	Industrial gas cylinder filling and distribution (argon, nitrogen, carbon dioxide, propane, ammonia, and methane) and lime recovery operations.	1980s - unknown
Airco/Chem Lime Corp. (operator)	Acetylene production and lime recovery operations	1975 -1985
Airco (formerly ARPC)/Northern States Manufacturing and Materials (operator)	Acetylene production and lime recovery operations and wall board manufacturing	1970 -1975

Owner/Occupant	Type of Operation	Years
Air Reduction Pacific Co. (ARPC) (operator)	Acetylene production	1950 – circa 2000
ARPC/Industrial Processing Co. (operator)	Acetylene production and lime recovery operations	1960 - 1970
ARPC/Industrial Raw Materials, Inc. (operator)	Acetylene production and lime recovery operations	1950 - 1960
City of Portland (owner)		Unknown - 1942
None (aerial photograph)	Undeveloped site	1939

## 5. PROPERTY DESCRIPTION

Information on the property was obtained from Bridgewater (2000). The 4.95-acre site is located in an area known as the Guilds Lake Industrial Area. The property is located 0.1 miles south of the Willamette River (Figure 1). The Burlington Northern mainline railroad tracks are situated south of the site. To the west, a railroad spur is located adjacent to the site's property boundary and a Chevron asphalt refinery is located about 1,000 feet west of the site. Northwest Front Avenue is located along the northern property line and separates Tube Forgings, Lone Star, and Hampton sites (collectively referred to as the Front Avenue LLP properties) to the northwest, Shaver Transportation to the north, and Lakeside Industries to the northeast of the site. The NW Kittridge Avenue bridge structure is situated along the eastern boundary of the site.

The site lies above the 100-year Willamette River flood plain. The slope of the site area is generally flat. Over 90 percent of the ground surface at the site is paved or occupied by buildings. A brief history of the site's drainage system is given in Section 10.3.2.

The site has been used as a commercial and light industrial business park since 1996. The site is fenced, and the only access to the site is through the driveway off of NW Front Avenue. The business park consists of three concrete tilt-up buildings with flat roofs as shown in Supplemental Figure 2-1 from Bridgewater (2000). Building A, located in the northwest portion of the site, is occupied by Midwest Sign, Applied Industrial Technologies and Uniq Distributing. No floor drains were observed in this building. Building B, located in the northeastern portion of the site, is occupied by Colour Systems, WorldCom, and 04 Controls. No floor drains were observed in this building. Building C is located in the southern portion of the site and is occupied by *The Oregonian* newspaper. Two floor drains were observed near the compressors at this building (DEQ 2002).

There is no evidence of existing USTs (Bridgewater 2000). Two USTs were removed in 1989.

## 6. CURRENT SITE USE

The current site is owned by Schnitzer Investment Corporation (SIC) and is being used by seven independent industrial and commercial businesses, as shown in Supplemental Figure 2-1 from Bridgewater (2000).

Building A, located in the northwest portion of the site, is occupied by the following tenants:

- **Midwest Sign** receives and distributes printing and graphics supplies for a wide range of print media service providers. The facility stores, mixes, and distributes oil-based inks.
- **Applied Industrial Technologies** receives and distributes a wide range of small industrial parts, including belts, nuts, bolts, gaskets, and bearings. The site performs limited bearing cleaning with lube oil. Safety-Kleen regularly manages the wastes offsite. No floor drains were observed.
- **Uniq** receives and distributes household decorative tiles and tile installation supplies. No

manufacturing and no materials are repackaged. No floor drains were observed.

Building B, located in the northeastern portion of the site, is occupied by the following tenants:

- **Colour Systems** receives and distributes inks to customers including printing companies. The facility mixes and repackages inks (mostly oil-based) to customer's specifications. Ink solvents (naphtha- and toluene-based) are also stored. About nine drums of waste ink and waste solvent are generated each month and disposed of offsite by Safety-Kleen contractors. No floor drains were observed.
- **WorldCom** space is used as a general storage of trailer-mounted generators, large spools of cables, and supplies for maintenance of telecommunication cables. No floor drains were observed.
- **04 Controls** distributes small electrical switching components. No equipment maintenance or assembly is performed. No floor drains were observed.

Building C is located in the southern portion of the site and is occupied by a single tenant:

- **The Oregonian** newspaper uses Building C to store and insert daily newspaper advertising pieces. The insert machines are operated using compressed air and are located on the northwest corner of the space. A 55-gallon drum of lube oil is stored near the air compressors. Water from the air compressors and floor-cleaning fluids drains into two floor drains that are connected to the City of Portland sewer system.

## 7. SITE USE HISTORY

Based on aerial photographs, the land now owned by SIC was vacant until approximately 1939 (TETC 1990). From 1942 to 1985, the site was used for acetylene production and lime recovery by Airco (formerly known as Air Reduction Pacific Co.), Industrial Raw Materials, Inc., and Chem Lime Corp. From 1970 to 1975, Northern States Manufacturing and Materials manufactured wallboard. In 1985, Airco ceased acetylene production and used the site only for industrial gas (argon, nitrogen, carbon dioxide, propane, ammonia, and methane) cylinder filling and distribution. Chem Lime Corp. continued lime recovery operations until 1987 (TETC 1990). In 1987, Northwest Airgas, Inc. acquired Airco. In 1989, Chem Lime ceased operations, and most of the lime sludge was removed from the facility. At the end of the same year, partial site cleanup and remediation occurred, including the demolition of the Chem Lime building and acetylene production plants (TETC 1991). In 1991, Crawford Street Corp purchased the site, and Asset Recovery used the site for scrap metal recycling (which included storing, processing and shipping metals) and diesel truck refueling until 1996. SIC purchased the site in 1996. The company performed an environmental site assessment and several remediation activities, which included the demolition of the old facilities and construction of current buildings (Bridgewater 2000). The site was redeveloped as a commercial and light industrial park (DEQ 2004).

The process used to produce acetylene involved reacting calcium carbide with water. In addition to acetylene, calcium hydroxide was produced as a byproduct. The calcium hydroxide byproduct was stored in lime lagoons, as shown in Supplemental Figure 2-4 of Bridgewater (2000). The large lagoon shown in this figure is approximately 220 ft by 150 ft and was 4 ft deep. The caustic lime was sold to farmers as soil amendment and to area-wide industries to buffer low pH solutions (DEQ 1999). Airco obtained a Waste Disposal Permit from DEQ in 1983 for the placement of the lime byproduct in the lagoon (Bridgewater 2000).

Two drain fields/septic systems were present between about 1942 and 1971, as shown in Supplemental Figure 2-4 from Bridgewater (2000). A dry well is reported to have existed onsite (DEQ 2004). Sewer service was provided to the property in 1971, though facilities were not connected until 1983 (DEQ 2004).



## 8. CURRENT AND HISTORIC SOURCES AND COPCS

The understanding of the historic and current potential upland and overwater sources at the site is summarized in Table 1. The following sections provide a brief discussion of the potential sources and COPCs at the site requiring additional discussion.

### 8.1. Uplands

**Historic:** Potential source areas are shown in Supplemental Figure 2-4 from Bridgewater (2000). The primary potential historical sources of contaminants at the site were releases associated with operations at the acetylene production and lime recovery areas (Bridgewater 2000, DEQ 2004).

**Current:** Currently, 90% of the site has been paved or developed. The exposed ground surface area has imported landscape fill. None of the current facilities onsite have operations that would be considered as having potential sources of contaminants to the river. In June 2004, DEQ determined that the site is not a likely current source of contamination to the Willamette River (DEQ 2004). DEQ (2004) also reported, "EPA agreed that this site does not appear to be a current source of contamination to the river."

### 8.2. Overwater Activities

☐ Yes ☒ No

The Kittridge site is not adjacent to the river.

### 8.3. Spills

No known or documented spills at Kittridge Distribution Center site were recorded from DEQ's Emergency Response Information System (ERIS) database for the period of 1995 to 2004, from oil and chemical spills recorded from 1982 to 2003 by the U.S. Coast Guard and the National Response Center's centralized federal database [see Appendix E of the Portland Harbor Work Plan (Integral et al. 2004)], from facility-specific technical reports, or from DEQ correspondence. TETC (1990) reported that two caustic spills (75 and 5 gallons) occurred at "Kittridge/Front Avenue." No further details about the spills were provided.

## 9. PHYSICAL SITE SETTING

Available information regarding the local geology and hydrogeology of the site is limited and was obtained from the Preliminary Assessment (PA) report (Bridgewater 2000). Subsurface investigation activities included the completion of five temporary monitoring wells (each completed to depths of approximately 15 feet bgs) and 11 probe borings at the site. Information regarding the depths of the probe borings was not available in the DEQ files.

### 9.1. Geology

According to the PA report, geologic materials under the site consist of Willamette River alluvial deposits that are underlain by basalt flows of the Columbia River Basalt Group (CRBG). Soils observed generally consist of fine sand and silty sand (Bridgewater 2000).

### 9.2. Hydrogeology

Shallow groundwater at the site is reported to be 10 to 15 feet bgs. The groundwater flow direction is inferred to be northerly, toward the Willamette River (Bridgewater 2000).

## 10. NATURE AND EXTENT (*Current Understanding*)

The current understanding of the nature and extent of contamination for the uplands portions of the site is summarized in this section. When no data exist for a specific medium, a notation is made.

### 10.1. Soil

#### 10.1.1. Upland Soil Investigations

☒ Yes ☐ No

Site investigations began in April 1989 with the characterization of material from the lime sludge lagoon and soil associated with the removal of two USTs used to store acetone and heating oil (TETC 1990). [The former locations of the USTs are shown in Supplemental Figure 2-4 from Bridgewater (2000).] In 1990, surface and near-surface soil samples were collected from potential source areas as part of the site assessment conducted by TETC (1990) [see Supplemental Figure D from TETC (1990)]. Finally, additional samples were collected in 1996 in conjunction with waste removal and remedial actions (Bridgewater 2000). Soil data from these investigations are summarized in Supplemental Table 2 from TETC (1990).

In summary, sludge from the lime ponds contained TPH and metals (chromium, lead, zinc). EP Toxicity concentrations of metals were less than the federal hazardous waste designation concentrations (Bridgewater 2000). Site soils contained detectable concentrations of metals, TPH, and PCBs (see Supplemental Table 2). Sludge and contaminated soils were subsequently removed (see Section 11).

DEQ (1999) noted that TETC attempted to collect soil from beneath the lime pond at six different locations. A hand auger could penetrate a hard black to gray layer of material but the backhoe could not. This layer was encountered in all six trenches, and it is presumed that the total aerial extent of this layer was not mapped.

Samples taken from oil-stained concrete near the compressors had PCBs ranging from undetected to 9.6 ppm. Sampling prior to disposal reported 0.077 to 0.24 mg/kg PCBs. The concrete was removed and disposed of offsite in 1996 (Bridgewater 2000).

#### 10.1.2. Riverbank Samples

☐ Yes ☒ No

Not applicable.

#### 10.1.3. Summary

Petroleum-contaminated soils have been removed from the site (Bridgewater 2000). Currently, over 90 % of the site is either paved or covered with buildings. The small portion of the site that is not paved is covered with imported clean landscape fill. Sheet runoff is not a potential transport pathway at this site.

### 10.2. Groundwater

#### 10.2.1. Groundwater Investigations

☒ Yes ☐ No

In 1990, five temporary monitoring wells were completed to depths of 15 feet bgs (TETC 1990). Apparently, samples collected from the wells had high turbidity levels, which were attributed to a lack of a filterpack around the well screen or insufficient well development (Bridgewater 2000). The samples were analyzed for petroleum hydrocarbons, VOCs, and total metals. In 1996, groundwater samples were collected from 11 probe borings completed at the site. These groundwater samples were analyzed for dissolved metals (filtered in field) and VOCs.

**10.2.2. NAPL (Historic & Current)**

☐ Yes ☒ No

Available documents indicate that NAPL has not been observed at the site.

**10.2.3. Dissolved Contaminant Plumes**

☒ Yes ☐ No

Acetone and methyl isobutyl ketone (MIBK) were detected in a groundwater sample collected from one of the temporary wells completed in 1990. However, no VOCs were detected in any of the groundwater samples collected during the 1996 groundwater investigation. Arsenic, lead, and nickel were detected in filtered samples collected from the 1996 probe borings (Bridgewater 2000).

**Plume Characterization Status** ☐ Complete ☐ Incomplete

The DEQ has indicated that, based on available data, additional groundwater investigation is not warranted at this time (DEQ 2004, pers. comm.).

**Plume Extent**

Arsenic was detected in groundwater samples collected from three probe borings located in the northeast portion of the site. Lead was detected in a groundwater sample collected from the probe boring located along the east-central boundary of the site. Nickel was detected in groundwater samples collected from eight probe borings located throughout the site but at concentrations below applicable regulatory levels. Figure 2 shows the estimated extent of arsenic and lead in groundwater.

**Min/Max Detections**

Groundwater analytical data presented below are based on data collected during the 1990 and 1996 groundwater investigations (Bridgewater 2000).

Analyte	Minimum Concentration (µg/L)	Maximum Concentration (µg/L)
<b>Metals (dissolved)</b>		
Arsenic	<2	14* (350**)
Lead	<2	4* (340**)
Nickel	<5	7.3* (1200**)
<b>VOCs</b>		
Acetone	<50	17,000***
Methyl isobutyl ketone	<50	4,600***

\* Samples collected in 1996.

\*\* Samples collected in 1990 were significantly turbid.

\*\*\* Sample collected in 1990. Constituent not detected during 1996 groundwater investigation.

**Current Plume Data**

No current data are available. The most recent groundwater data were collected at the site in 1996.

**Preferential Pathways**

No information was available in the DEQ file to indicate that preferential pathways have been assessed at the site.

**Downgradient Plume Monitoring Points (min/max detections)**

No data are available. No monitoring points remain.

**Visual Seep Sample Data**

☐ Yes ☒ No

Not applicable. The site is not located adjacent to the river.

**Nearshore Porewater Data**

Not applicable. The site is not located adjacent to the river

**Groundwater Plume Temporal Trend**

Groundwater plume temporal trend data have not been collected.

**10.2.4. Summary**

Groundwater investigation activities conducted at the site included the completion of five temporary monitoring wells in 1990 and 11 probe borings in 1996. Acetone and MIBK were detected in a groundwater sample collected from one of the temporary wells but not in any of the probe borings. Arsenic, lead, and nickel were detected in groundwater samples collected from the probe borings. The DEQ has indicated that it is unlikely that groundwater with elevated metal concentrations is migrating from the site to the Willamette River and that, based on available data, additional investigation at the site is not warranted at this time (DEQ 2004).

**10.3. Surface Water**

The SIC - Kittridge stormwater system has been modified three times since operations began at the site in 1942.

A 1942 plumbing and drainage plan [TETC 1990, Appendix F; see Supplemental Figure 'A' from City of Portland (1942)] indicates that up to 1990 there was a direct link from the site to the river through a drain channel at the cylinder testing area. The drain channel was used to collect water from the cylinder testing area and from water sprayed onto cylinders to keep them cool during the summer, which then emptied into a wood flume whose termination was the river.

In 1984, the City issued a plumbing permit to Airco for the installation of five new catch basins in the vicinity of the cylinder refilling building (COP 1984). These catch basins conveyed stormwater runoff to a City of Portland storm line that discharges to the Willamette River at City Outfall 19.

In 1991, Asset Recovery paved much of the site and installed a stormwater collection system in the southern portion of the site. Catch basins located in paved areas are shown in Supplemental Figure 2-5 from Bridgewater (2000). Asset Recovery obtained a general NPDES 1200-R stormwater permit in September 1991. Monitoring was conducted up through 1995 when Asset Recovery ceased site activities.

Currently, stormwater at the site area either infiltrates into the ground or is collected in catch basins connected to the City of Portland storm sewer system that eventually discharges to the Willamette River at City Outfall 19 (Figure 1). In 1996, SIC demolished all buildings and constructed the three warehouses currently located on the property. The construction included installing a stormwater collection system that met City of Portland requirements (Bridgewater 2000).

**10.3.1. Surface Water Investigation**

☐ Yes ☒ No

**10.3.2. General or Individual Stormwater Permit (Current or Past)**

☒ Yes ☐ No

Permit Type	File Number	Start Date	Outfalls	Volumes	Parameters/Frequency
1200-R	NA	9/1991	NA	NA	oil & grease, pH, and toxicity with semi-annual discharge monitoring for arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc.

**Do other non-stormwater wastes discharge to the system?**

☐ Yes ☒ No

**10.3.3. Stormwater Data**

☒ Yes ☐ No

Asset Recovery sampled stormwater discharge at two points between 1993 and 1995 as required by DEQ under the NPDES 1200-R stormwater permit (DEQ 1999). Sampling locations were not available in DEQ (1999), but monitoring results were reported for four sampling events. Maximum detected metal and pH concentrations are as follows:

Analyte	Maximum Concentration (mg/L)
Arsenic	Not detected
Cadmium	0.05
Chromium	0.06
Copper	0.68
Lead	0.60
Mercury	0.0079
Nickel	0.08
Zinc	2.1
pH (dimensionless)	8.72

**10.3.4. Catch Basin Solids Data**

☐ Yes ☒ No

Available records indicate that no catch basin solids data are available for the site.

**10.3.5. Wastewater Permit**

☐ Yes ☒ No

**10.3.6. Wastewater Data**

☐ Yes ☒ No

Available records indicate that no wastewater data are available for the site.

**10.3.7. Summary**

Currently, stormwater at the site area either infiltrates into the ground (approximately 10% of the site is pervious surface) or is collected in catch basins connected to the City of Portland storm sewer system that discharges to the Willamette River at City Outfall 19 (Figure 1). Historically, a 1942 plumbing and drainage plan [Supplemental Figure A from City of Portland (1942)] indicated that up to 1990 there was a direct link from the site to the river through a wood flume and a drain channel at the cylinder testing area.

#### **10.4. Sediment**

##### **10.4.1. River Sediment Data**

☒ Yes ☐ No

Historically, a portion of the Kittridge Site drained to the Willamette River via a wood flume. DEQ (2004) reported that insufficient data are available to evaluate if historic stormwater discharges have impacted the Willamette River.

##### **10.4.2. Summary**

See Final CSM Update.

### **11. CLEANUP HISTORY AND SOURCE CONTROL MEASURES**

#### **11.1. Soil Cleanup/Source Control**

In 1989, two USTs used to store acetone and heating oil were removed from the site. Acetone was undetected (<0.2 ppm) in soil samples collected beneath the acetone tank, and TPH concentrations were below action levels (see Section 10.1) (TETC 1990).

In February 1990, farmers removed most of the sludge from the lagoon for use as soil amendment. Considerable residual lime was still evident in the surface soils as deep as 4 inches near the southwest part of the site (TETC 1990). The lagoon was filled and graded, and was not observed in 1995 aerial photos. Also in 1990, soil containing TPH was removed to a depth of 18 inches from a small area between the cylinder refilling room and the compressor room/paint shop [see Supplemental Figure D from TETC (1990)]. Investigations in 1996 found no evidence of petroleum hydrocarbons in this area (Bridgewater 2000).

In 1996, approximately 11 cubic yards of petroleum-contaminated surface soils were excavated and disposed of offsite. These soils were from the northwest corner of the site and north of the former Chem Lime building in the southwest corner of the site (Bridgewater 2000). Concrete stained with oil containing low levels of PCBs was disposed of as demolition waste (see Section 10.1).

#### **11.2. Groundwater Cleanup/Source Control**

No groundwater source controls have been conducted at the site.

#### **11.3. Other**

In 1991, Asset Recovery paved much of the site, installed a stormwater collection system with numerous catch basins and sediment traps as shown in Supplemental Figure 2-5 from Bridgewater (2000), and obtained a NPDES 1200-R stormwater permit (Bridgewater 2000).

In 1996, SIC demolished all structures on the site, installed a stormwater system meeting City of Portland requirements, performed additional paving, and constructed the existing three warehouses (Bridgewater 2000).

According to Bridgewater (2000), CH2M Hill performed several remedial activities on the site in April 1996, including removal of stained soils (see Section 11.1), concrete, and other waste debris. A lead concentration of 3.6 mg/L was detected in interior wall paint, and the material was disposed of as non-hazardous solid waste.

The septic tank was removed from the southeastern corner of the site, as shown in Supplemental Figure 2-4 from Bridgewater (2000). Approximately 69 gallons of emulsified oil and 139 gallons of oily solids from the tank were disposed of offsite. The tank was not connected to the stormwater system, and no evidence of soil contamination was observed in the soil surrounding the tank. City records indicate that the site has been connected to the public

sewer system since at least 1961 (COP 1961).

#### **11.4. Potential for Recontamination from Upland Sources**

See Final CSM Update.

## **12. BIBLIOGRAPHY / INFORMATION SOURCES**

### **References cited:**

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TETC. 1991. Summary Report for an Environmental Site Assessment and Remediation of Property Located at 4959 NW Front Avenue, Portland, OR. Prepared for Northwest Airgas, Inc. The Earth Technology Corporation, Long Beach, CA.

### **Figures:**

Figure 1. Site Features

Figure 2. Extent of Impacted Groundwater

### **Tables:**

Table 1. Potential Sources and Transport Pathways Assessment

**Supplemental Figures:**

- Figure 2-1. Current Site Plan. Kittridge Distribution Center (Bridgewater 2000)
- Figure 2-4. Site Plan 1991. Kittridge Distribution Center (Bridgewater 2000)
- Figure 2-5. Site Plan 1995. Kittridge Distribution Center (Bridgewater 2000)
- Figure D. Schematic Site Sketch of the Northwest Airgas, Inc. Property (TETC 1990)
- Figure A. Sewer in N.W. Front Avenue (City of Portland 1942)

**Supplemental Tables:**

- Table 2. Soil Chemical Concentrations at Schnitzer Investment Corporation – Kittridge Site (TETC 1990)



## **FIGURES**

Figure 1. Site Features

Figure 2. Extent of Impacted Groundwater

DO NOT QUOTE OR CITE

This document is currently under review by US EPA and its federal, state, and tribal partners, and is subject to change in whole or in part.





Map Document: (C:\GIS\Projects\Portland\_Harbor\LWG-Map-Projects\Conceptual\_Site\_Model\Sample\_Locations\_3rd\_Group.mxd)  
 Plot Date: 08/30/2005

Aerial Photo Date: October 2001.  
 Base Map features from Portland Metro's RLIS.

Outfall information contained on this map is accurate according to available records; however, the City of Portland makes no warranty, expressed or implied, as to the completeness or accuracy of the information published (updated June 2005).

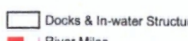
**Legend**



Seep Photo Location  
 (Not location of actual Seep)

Selected ECSI Site Property Boundary

Navigation Channel



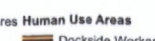
Docks & In-water Structures



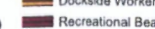
River Miles



35ft. Contour (NAVD 88)



Human Use Areas



Dockside Worker



Recreational Beach Use

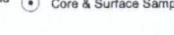


Transient

**LWG Round 2 Proposed Sediment Samples**



Surface Sample Only



Core & Surface Sample



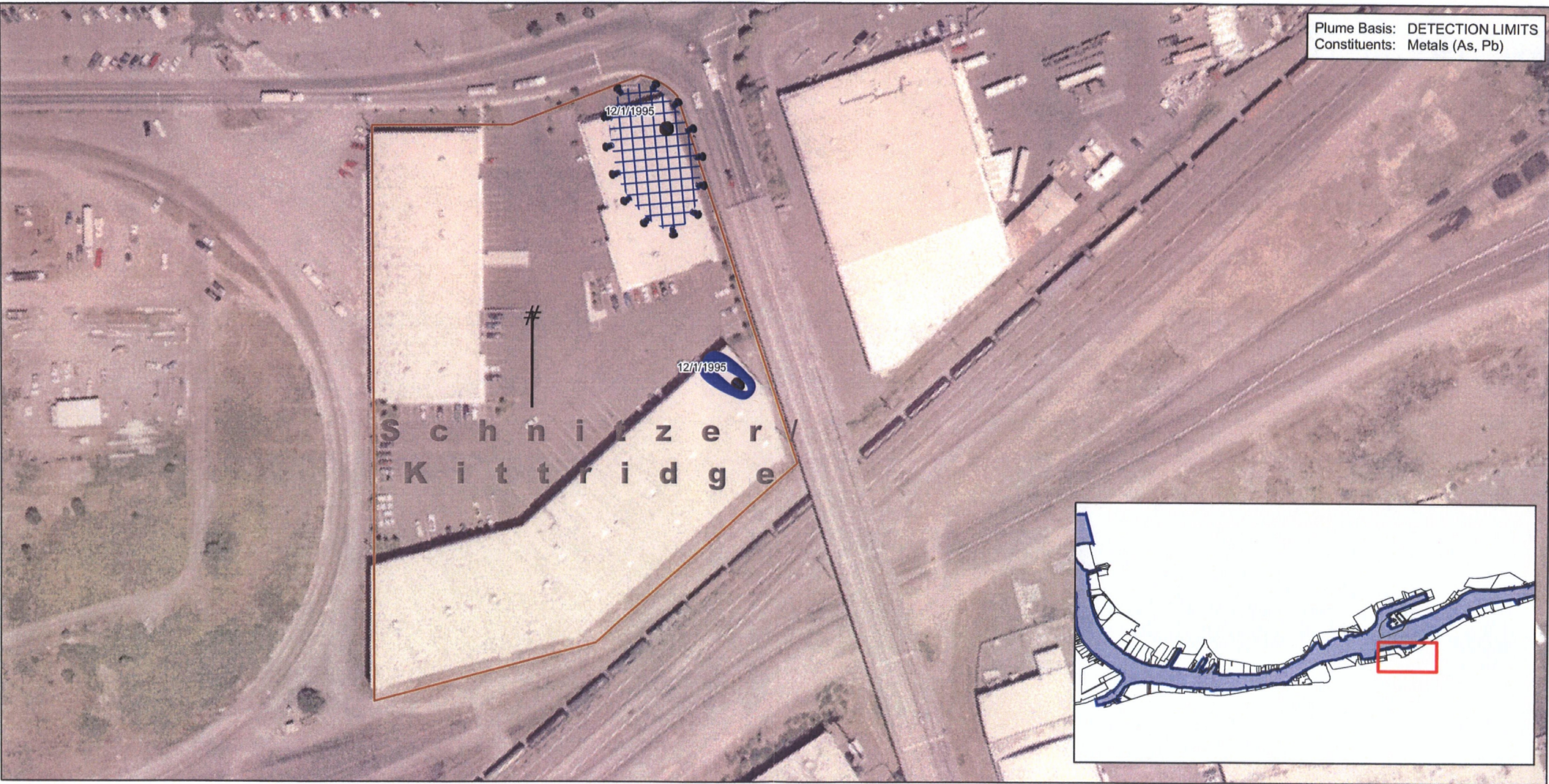
0 50 100 200 Feet

**DRAFT**

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Figure 1-Site Features  
 Portland Harbor RI/FS  
 Conceptual Site Model  
 Schnitzer Investment-Kittridge Distribution Center  
 ECSI 2442





Plume Basis: DETECTION LIMITS  
Constituents: Metals (As, Pb)



0 75 150 Feet



FEATURE SOURCES:  
Transportation, Water, Property, Zoning or Boundaries: Metro RLIS.  
ECSI site locations were summarized in December, 2002  
and January, 2003 from ODEQ ECSI files.

Map Creation Date: Monday, November 22, 2004

File Name: Fig2\_SchnitzKitt\_SummaryMap.mxd

**Legend**

- Site Boundary
- Inferred Groundwater Flow

**Contaminant Type**

- Metals (As, Pb)

**Extent of impacted groundwater**

For details, refer to plume interpretation table in CSM document.

- Single or isolated detection of COI's. Extent or continuity of impacted groundwater between sample points is uncertain. Color based on contaminant type.
- Estimated extent of impacted groundwater area. Color based on contaminant type.



**Figure 2**  
**Portland Harbor RI/FS**  
**Schnitzer/Kittridge**  
**Upland Groundwater Quality Overview**

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## **TABLES**

Table 1. Potential Sources and Transport Pathways Assessment

**Schnitzer Investment - Kittridge Distribution Center #2442**

Table 1. Potential Sources and Transport Pathways Assessment

Potential Sources	Media Impacted					COIs																Potential Complete Pathway				
	Surface Soil	Subsurface Soil	Groundwater	Catch Basin Solids	River Sediment	TPH			VOCs		SVOCs	PAHs	Phthalates	Phenolics	Metals	PCBs	Herbicides and Pesticides	Dioxins/Furans	Butyltins	Calcium hydroxide (lime)	Bunker C oil	Overland Transport	Groundwater	Direct Discharge - Overwater	Direct Discharge - Storm/Wastewater	Riverbank Erosion
Description of Potential Source						Gasoline-Range	Diesel-Range	Heavier-Range	Petroleum-Related (e.g. BTEX)	VOCs																
<b>Upland Areas</b>																										
Historical acetylene production and lime recovery	✓	✓	✓					✓		✓					✓					✓				✓		
<b>Overwater Areas</b>																										
<b>Other Areas/Other Issues</b>																										

Notes:

<sup>1</sup> All information provided in this table is referenced in the site summaries. If information is not available or inconclusive, a ? may be used, as appropriate. No new information is provided in this table.

✓ = Source, COI are present or current or historic pathway is determined to be complete or potentially complete.

? = There is not enough information to determine if source or COI is present or if pathway is complete

Blank = Source, COI and Historic and Current pathways have been investigated and shown to be not present or incomplete

UST Underground storage Tank  
AST Above-ground Storage Tank  
TPH Total Petroleum Hydrocarbons  
VOCs Volatile Organic Compounds  
SVOCs Semi-volatile Organic Compounds  
PAHs Polycyclic aromatic hydrocarbons  
BTEX Benzene, toluene, ethylbenzene, and xylenes  
PCBs Polychlorinated biphenols

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## **SUPPLEMENTAL FIGURES**

- Figure 2-1. Current Site Plan. Kittridge Distribution Center (Bridgewater 2000)
- Figure 2-4. Site Plan 1991. Kittridge Distribution Center (Bridgewater 2000)
- Figure 2-5. Site Plan 1995. Kittridge Distribution Center (Bridgewater 2000)
- Figure D. Schematic Site Sketch of the Northwest Airgas, Inc. Property (TETC 1990)
- Figure A. Sewer in N.W. Front Avenue (City of Portland 1942)

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SFPP Rail Yard

Oregonian

Loading Dock

Asphalt Pavement  
w/catch basins

Loading Dock

Loading Dock

Oregonian

Loading Dock

Asphalt Pavement  
w/catch basins

Vacant Ground/  
SFPP Rail Spur

Property Boundary  
(fenced)

Midwest  
Sign

Applied  
Industrial  
Technologies

Uniq Distributing

Loading  
Dock

Asphalt Pavement  
w/catch basins

Drive-Way  
Entrance

NW Front Avenue

04 Controls

WorldCom

Colour  
Systems

NW Kittridge Avenue (elevated bridge structure)

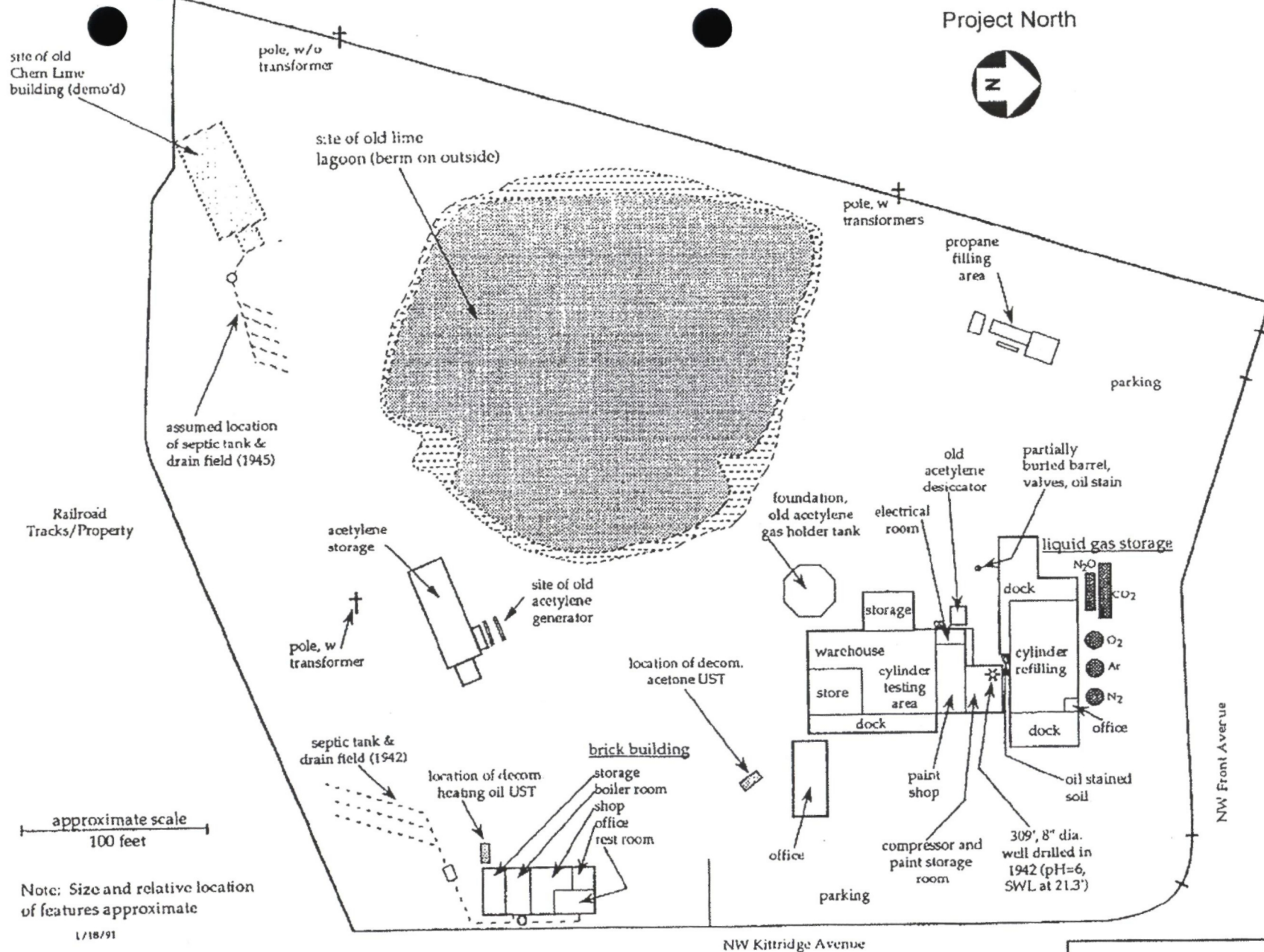
Approximate Scale

60 Feet

**Figure 2-1**  
Current Site Plan  
Kittridge Distribution Center  
BRIDGEWATER GROUP, INC.



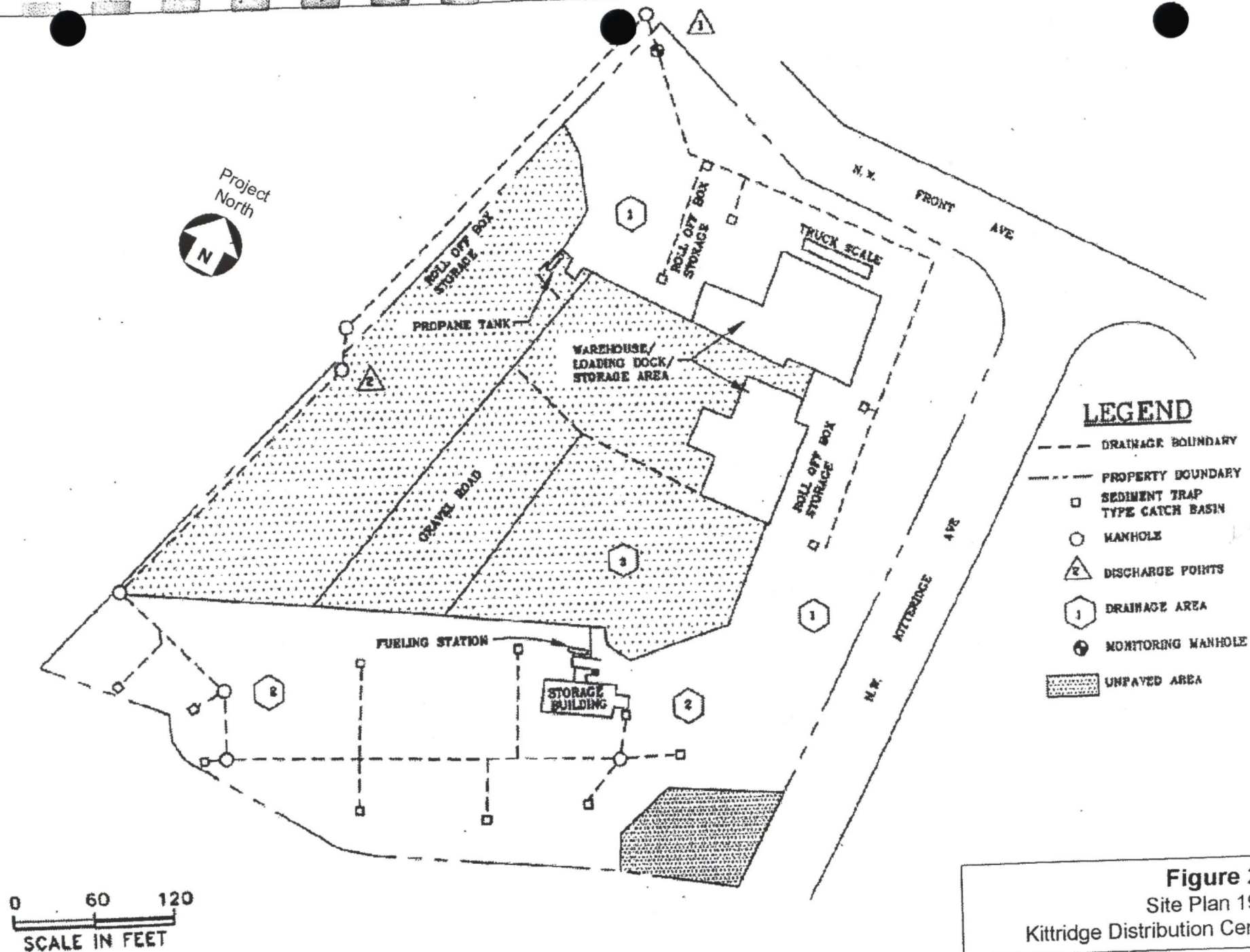




Source: The Earth Technology Corporation 1990

**Figure 2-4**  
**Site Plan 1991**  
**Kittridge Distribution Center**  
**BRIDGEWATER GROUP, INC.**

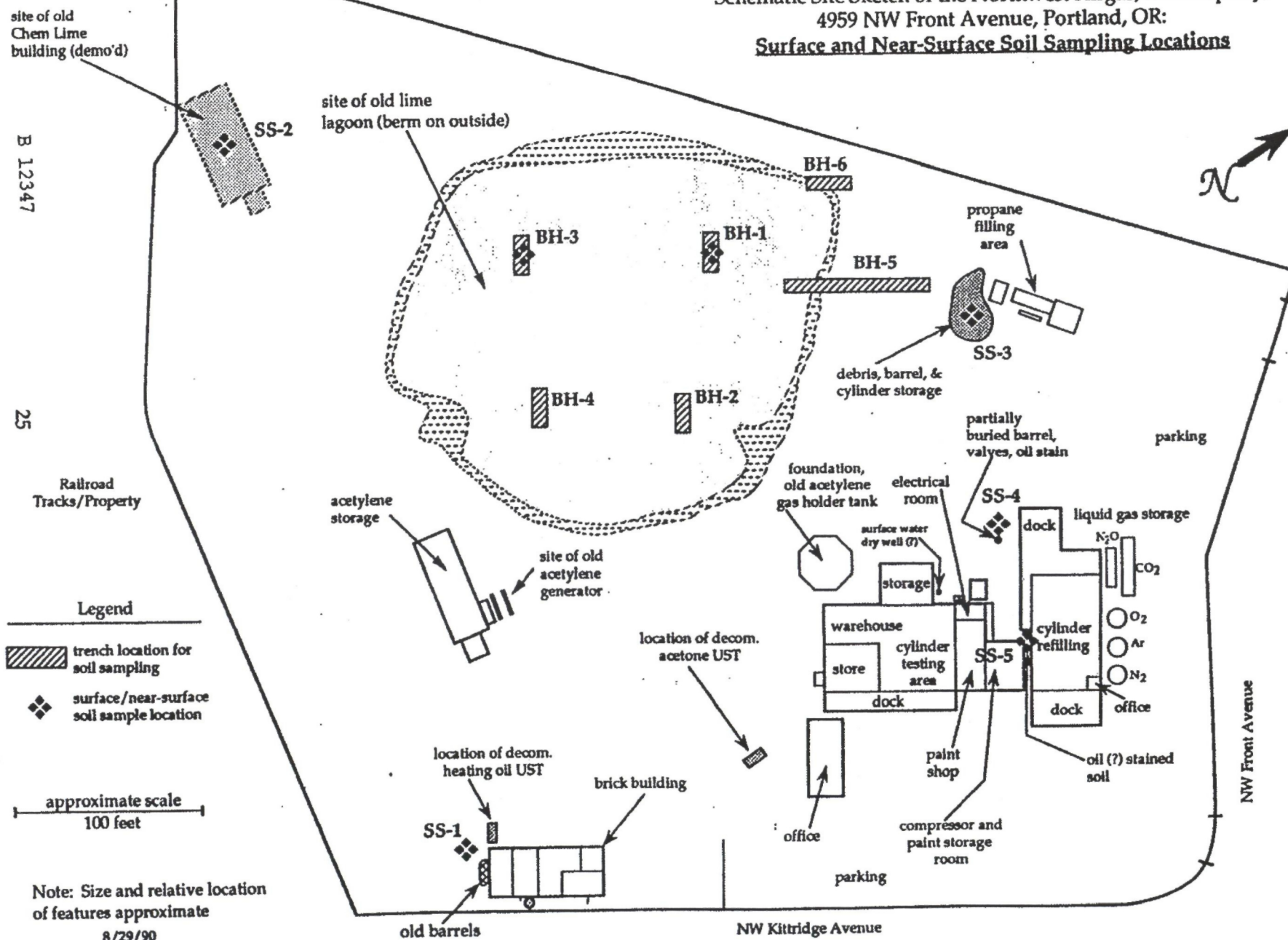




Source: CH2M HILL 1995

**Figure 2-5**  
Site Plan 1995  
Kittridge Distribution Center  
BRIDGEWATER GROUP, INC.

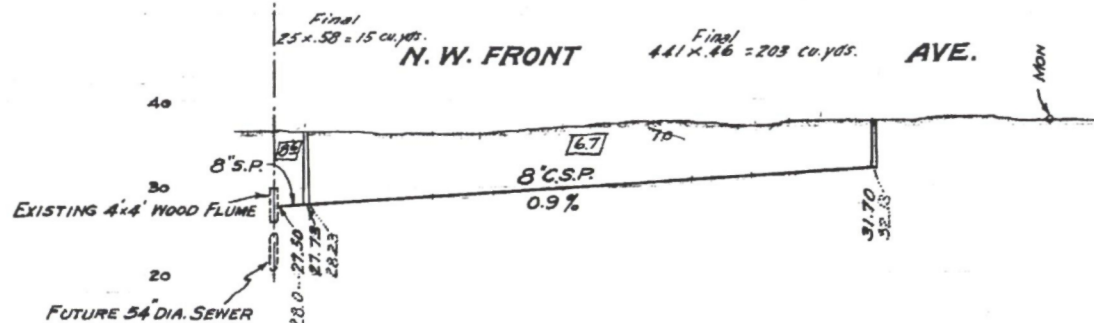
Figure D.  
Schematic Site Sketch of the Northwest Airgas, Inc. Property,  
4959 NW Front Avenue, Portland, OR:  
Surface and Near-Surface Soil Sampling Locations



# FINAL ESTIMATE

Name of Contractor Empire Const. Co.  
 Contract Completed Dec. 15th 1942  
 Kind of Pipe Cement Sewer Pipe  
 Worked by L.F.S. Checked by O.N.B.  
 Entered on Atlas by L.F.S. Checked by O.N.B.  
 Final Map by L.F.S. Checked by O.N.B.

~~Prelim. Est~~  
~~466 x 48 x 824 cu. yds.~~  
~~10%~~  
~~246 "~~



Total Final  
 203 cu. yds.  
 15 " "  
 218 " "

SEWER IN  
 N.W. FRONT AVENUE  
 PORTLAND ORE. OCT. 1942

BEN S. MORROW  
 CITY ENGINEER

SCALE 1"=100'

EXHIBIT 'A'

APPROVED [Signature] DATE 10-13-42

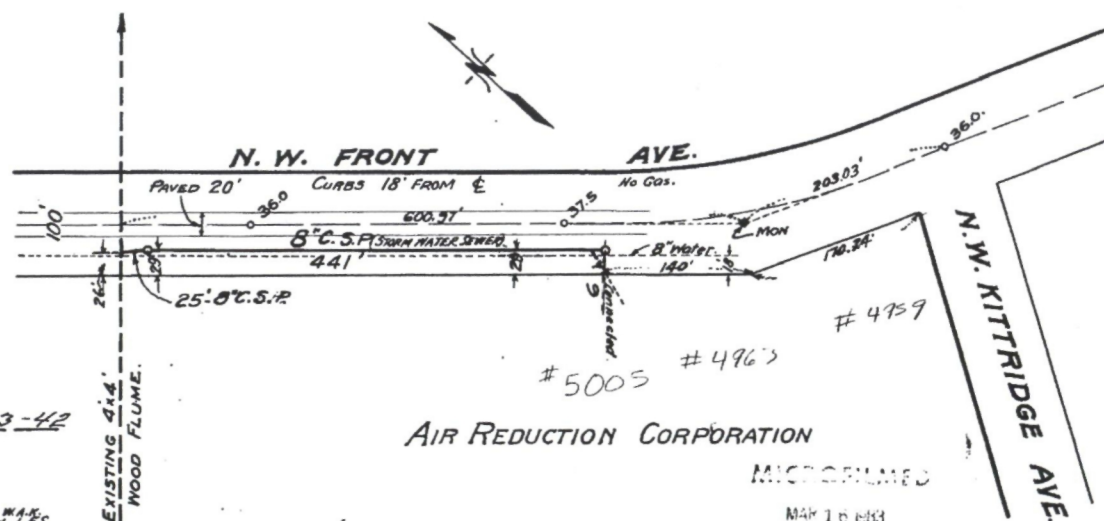
(City Engineer, City of Portland)  
 Reg. Prof. Engr. No. 219, Nov. 1919

ORD. No. 78028

PERMIT JOB

JOB NO. 1521 PET. NO. 192 1/4 SEC. 2524

Drawn - W.A.K.  
 Checked - L.F.S.



AIR REDUCTION CORPORATION

MICROFILMED

MAP 16 683

FILE  
 V-63

## **SUPPLEMENTAL TABLES**

Table 2. Soil Chemical Concentrations at Schnitzer Investment Corporation – Kittridge Site  
(TETC 1990)

Table 2. Soil Chemical Concentrations at Schnitzer Investment Corporation - Kittridge site (TETC 1990).

Sample Type	Investigation Date	Arsenic	Chromium	Lead	Chemical (mg/kg) <sup>1</sup>		PCBs	Acetone	Comment
					Zinc	TPH			
Sludge from lagoon (TETC 1990)	1989	---	<10 - 37	10-400	120 - 3,100	409 (1 composite sample)	---	---	Sample from top 40 inches of sludge; pH 12.5 to 11.8
Soil from UST excavations (TETC 1990)	1989	---	---	---	---	100 - 190	---	<0.2	TPH below DEQ cleanup standard of 500 ppm for Level 2 site (TETC 1990)
Soil - surface and nearsurface (TETC 1990)	1990	---	---	---	---	U - 2,600	U	---	6 of 7 samples below DEQ cleanup standard for TPH, soils in this area subsequently removed
Soil - nearsurface (0 - 18") soil (TETC 1991)		---	---	---	---	2,800	---	---	Soil removed but TPH at 2,800 mg/kg remained at bottom of excavation; later sampling by CH2M Hill (1996) did not observe any remaining contamination in this area
Soil and concrete (Bridgewater 2000)	1996	16 - 28	---	74 - 110	---	1,700 - 2,800	1.8, 0.94 (2 samples)	---	Two representative samples for waste disposal. VOCs and chlorinated pesticides undetected. Phenol = 9.9 mg/kg in 1 of 2 samples.

<sup>1</sup>Reported metals concentrations are for Total Metals.

U = undetected; detection limit not reported